THE EXTENSION HORTICULTURIST

March 1, 1923.

The orchard spray ring supplement has filled a widespread need and has been of use to extension men; we appreciate your kind letters. Now it occurs to us that we can be of more help to you if you will only let us know what you want. We can prepare supplements on other subjects, or include special information in the regular numbers of the Extension Horticulturist. If we haven't the desired information at hand, we probably know just where to get it and will give full credit for what we use. What subject shall we tackle next?

This number completes the series of special reports of state workers and we are now ready to take up special topics.

Office of Horticultural and Pomological Investigations
and States Relations Service Cooperating,
U. S. Department of Agriculture,
Washington, D. C.

Report of Horticultural Extension Work
State of Washington.

The Horticultural extension work in the State of Washington has been divided into three sections: A. Tree fruits; B. Small fruits; C. Potatoes. The efforts have been directed toward assistance in commercial production.

A. Tree Fruits.

The work in tree fruits is divided as follows:

1. Soil Management; 2. Irrigation; 3. Pruning; 4. Grafting; 5. Thinning; 6. Harvesting; 7. Pest Control.

1. Soil Management: Under soil management, demonstrational orchards have been established in commercial fruit sections. The best cover cropping methods and systems of commercial fertilizing have been employed. Practically all of the commercial orchard sections of eastern Washington are irrigated, and during the earlier period of orchard industry clean cultivation was practiced almost exclusively. This brought on many difficulties within a few years, such as the lack of sufficient nitrogen, hard compact soils which would not take up water, and a generally poor physical condition. Vetch and alfalfa have been the two principal legumes used in the orchards. Last year in Spokane County as a result of the work, 2,000 acres were reported as having been seeded to vetch. In other counties, practically all of the orchards are now seeded to alfalfa.

2. Irrigation: (No discussion given under this head. Editors.)

3. Pruning: A total of 151 pruning demonstrations and meetings were held. Most of these were given to illustrate the best method of pruning, as practically all of the commercial orchardists were practicing some form of pruning and it was merely a question of getting them to use the best method and showing the results produced. During the season growers reported fruit with much better color and size, and trees of better vigor. In January this year 13 demonstrations were held in Yakima County with an attendance of 956.

4. Grafting: Girdling of trees by mice in the irrigated sections has been serious the past two years. Demonstrations in bridge grafting have been conducted in a number of the counties resulting in a saving of many trees. Twelve orchardists alone report a saving of $19,425.00 as a result of the demonstrations.

5. Thinning: Results of the thinning demonstrations have been very interesting as well as gratifying to the Extension Service. Most of them were on apple trees. In 1922, 86 demonstrations were held. Two or three trees were thinned in every case and the results checked against the same number of trees not thinned, or poorly thinned, in the same orchard. The results have been good in most cases. The difference in the value of the fruit favoring the thinned tree in nearly every case, in some cases as much as $5.00 per tree.

6. Harvesting: Three apple packing schools were conducted in Spokane County by Mr. E. G. Wood, Horticultural Specialist, with an attendance of 226.

7. Pest Control: Several pest tours were organized in which orchard troubles were analized and recommendations made. Twenty-one growers from Yakima County report a saving of $1,307.00 as a result.

The tree fruit work in western Washington has been largely in connection with the home orchards. Home orchards have been pruned and sprayed and the results checked, and they have been very gratifying to the cooperator in every case. We are planning to extend them to include more orchards in different districts. They are planned on a larger scale this year, that is, the unit in the demonstration will be of larger acreage. The most important work in western Washington has been in connection with the strawberries or bush berries.

B. Small Fruits.

This industry has proven quite profitable in western Washington. In many sections larger plantings have been made during the past few years. To assist the growers, a number of demonstration plots have been established in connection with commercial fertilizers and cover crops, and methods of training bush fruits.. Better yields are being harvested from the red raspberries which are properly trained. In one instance, the grower reports an increase of nearly 75 crates per acre on the plot which was trained in the weaving system.

C. Potatoes.

A campaign has been put on for the improvement of the potato in nearly all of the potato sections. The amount of certified seed grown has increased considerably during the last two years as a direct result of educational work done by the Extension Service. The use of better seed has been generally advocated. One grower from Walla Walla reports an increase of 50 sacks an acre simply due to improved seed. Seed treating has also been established as a general practice in all of the commercial producing sections during the past few years, largely through the Extension Service. A great deal has been done toward standardizing potato varieties. Those recommended as best are Burbank, Pride of Multonomah, White Star and American Wonder. In eastern Washington, the Netted Gem or Russett Burbank is grown to a considerable extent.

In order to enable the growers to handle a higher grade product of more uniform quality, potato grading demonstrations were held in five different counties in western Washington. The grading of the potatoes from these sections has enabled the growers to dispose of their crops when the price of average potatoes has been too low to pay to market them.

A small amount of work has been done in landscape gardening and vegetable gardening, but the demands in the other lines have been too great for much attention to be given to these subjects.

M. D. Armstrong.

State of Ohio
Fruit Extension Work.

The pomological projects carried forward during the year were the County Demonstration Orchard, Pruning and Training the Young Orchard, Orchard Fertilization and Fruit Marketing.

Forty-one county demonstration orchards were supervised in 12 counties. Special problems in fruit production such as the control of apple blotch and apple scab were included in this project. All orchards are carried under a definite written program which also includes the keeping of cost accounts. All phases of orchard practice are taken up. Careful follow-up work is given each orchard. The specialist conducts a follow up meeting in late summer when the results of the work are explained. Wide publicity to results are given with special emphasis in the county directly concerned.

Fifteen demonstrations in pruning and training the young orchard were supervised in 12 important commercial orcharding counties. The goal is to carry this project into all communities where new plantings are underway to assist in preventing the many costly mistakes so often made in pruning and training young trees. These demonstrations continue as long as results are of value.

The fertilization of orchards is considered in all county demonstration orchards, but is made a special project in 5 orchards in southern, central, and northern Ohio, where records are being kept on 900 trees to demonstrate the best practices of orchard fertilization.

In the fruit marketing project the specialists cooperated with the Ohio Farm Bureau Federation in the organization of 7 local fruit growers' cooperative associations. These were organized into the Ohio Fruit Growers' Cooperative Association. The specialists prepared the constitution and by-laws for the state and local associations and the grade specifications which were adopted with slight modifications. A "Buckeye Brand" label was adopted for the extra fancy and A grade packs. A selling contract was made with the North American Fruit Exchange, now the Federated Fruit and Vegetable Growers, Inc. During the shipping season just passed the Ohio Fruit Growers' Cooperative Association handled approximately 150 cars of apples and peaches.

The specialists assisted in handling production problems and in conducting demonstrations in packing and loading cases and in working out many details of packing house management.

Vegetable Extension Work.

Tomato spraying demonstrations carried out in Muskingum County gave good control of septoria leaf spot. Bordeaux mixture, 2-2-50, was used for the spray while the plants were in the cold frame and 4-4-50 for the five sprays given in the field. The sprayed plot returned a net profit at the rate of $140.00 per acre. The Bordeaux spray did not retard the maturity.

Certified seed potatoes in southern Ohio demonstrations gave an increase of 24.8 bushels per acre over home grown seed. The use of certified seed in Hamilton County has progressed to the point where a grower was appointed to visit the Minnesota section and purchase the supply for the county. Nine thousand bushels were bought for the 1922 season and seven thousand three hundred bushels for the 1923 season.

Potato spraying in southern Ohio for control of leaf hopper gave increases ranging from 14 bushels to 38 bushels per acre. Bordeaux mixture 5-7-50 was used at intervals of two weeks, four to five sprays being applied.

Fertility demonstrations on sweet corn grown for canning indicate that acid phosphate pays a larger net return than a complete fertilizer, and that broadcasting is to be preferred to an application in the row.

Landscape Gardening.

The demand for this kind of work is increasing so rapidly that it is a serious problem even now to satisfy the situation with the time available. An attempt is madd in general in the following ways:

1. Regularly organized demonstrations are held in as many counties as time allows. Plans are drawn in advance and the materials are ready at the occasion of a planting demonstration in the spring or fall. Fundamentals of the art and technical matters are discussed with the people who attend. The county agent is asked to have two representatives of each township in the county present so that they will be in position to assist in the work in their respective districts, particularly as leaders.

2. At meetings of county and township committees, demonstrations are given indoors. With large blocks cut from 2 x 4s, to construct rough buildings, green sponges for trees and shrubs, green and brown sawdust for grass and earth, any sort of building arrangement or landscape layout is made possible on a large table. The materials may be moved to show poor or good plans and to show how poor ones may be changed into good ones. Mimeograph sheets outlining and explaining various arrangements will serve to enable the committee members to give similar visual talks in their communities.

3. Time of the specialist is saved by using students to draft plans under the specialist's supervision.

4. No plans are drawn gratis except when in connection with demonstrations. Other requests are handled with student assistance, including surveys and drafting, under the specialist's supervision, and actual costs are paid by the persons served.

R. B. Cruickshank, Pomology.
N. W. Glines, Vegetable.
F. H. Beach, Landscape.

Horticultural extension work has been under way in Ohio for ten or twelve years and has become well established. Those who are conducting the work in Ohio are to be congratulated upon the way they have sold their work to the people. Editors

Fruit Work in Wisconsin
Continued from January Number.

Marketing.

Nineteen hundred twenty-two was a bumper apple year and increased the farmers' usual objection to spraying: "If I do spray and get good fruit I can't sell it."

It was evident early in the season that the marketing problem might be serious. This was particularly true in Jefferson and Rock Counties. The chief difficulty was in disposing of the early apples, Yellow Transparent and Oldenburg. In both counties special meetings were held to consider the marketing problems. As a result of these meetings and the work of the county agents, a cooperative advertising and selling plan was arranged. The county agent acted as the clearing house agent. In some cases the local markets were districted, the growers of a designated spray ring putting their fruit on one market while a neighboring ring was given another market.

Advertising campaigns were inaugurated to familiarize the people with the fact that good apples could be secured locally both for immediate consumption and winter use. The county fair offered an excellent opportunity to do this. The largest display of "farm orchard" apples ever made in Wisconsin was shown at the Jefferson County fair. Four spray rings competed for the prizes. The minimum limit for an entry was 15 bushels, the maximum 25 bushels. This exhibit of the Jefferson County Spraying Association was comprised of 100 bushels of sprayed and graded apples. The fruit was assembled from 27 different farms. Mr. Coyner, the county agent, says:

"The merchants of the city cooperated with us to dispose of the apples, and also to help sell the crop of sprayed and graded apples. This exhibit has created a demand for sprayed and graded fruit and also increased interest in organizing spraying associations. The exhibit was located in the Industrial Building, along with the merchants' and manufacturers' exhibits This pleased the farmers, as it made them feel that they were just as important as manufacturers or merchants.

The plate exhibits in the regular classes were the best ever shown at the Jefferson Fair. This exhibit was swelled to over-flowing by the members of the organized spray association.

I have held marketing conferences in Fort Atkinson, Jefferson, and Palmyra. In each town the merchants are putting on special apple sales. The farmers marketed their fall apples at $1.00 per bushel, net. This included McIntosh, Plumb Cider, Maiden Blush, McMahon. We are planning to have another marketing conference with the merchants in about 10 days to discuss prices on Fameuse, Westfield and winter apples."

A similar exhibit of 80 bushels was made later at a "Fall Festival and Dollar Day," held in Watertown. The entire exhibit was sold at good prices to individuals before the fair was half over and more than twice as much could have been sold had the fruit been available. Dodge County was also expected to exhibit at this farr, but so great had been the demand for "sprayed and graded" apples that their entire crop had been sold in advance of the fair.

Kansas.

In developing the Horticultural Project in Kansas during the past year, by far the greater portion of the Extension Horticulturist's time was devoted to orcharding.

The work done can best be summarized under several rather distinct headings.

Orchard Planting and Development.

About 15 one-acre orchards were planted in cooperation with farmers who promised to care for them according to recommendations prepared by the specialist, and who also promised to conduct these orchards as demonstrations, inviting their neighbors to all meetings and keeping them informed in regard to pruning, spraying, and cultural practices. There are now 101 of these one-acre orchards in the State, the first ones were planted 4 years ago. With a few exceptions these orchards were visited by the county agent, or specialist, or both, during the year for the purpose of conducting pruning demonstrations.

In addition to these one-acre orchards several commercial plantings were supervised and sites were selected for others. These orchards will be used as demonstrations. One 30 acre orchard for which the site was selected and the planting supervised is now in its second year as a demonstration orchard.

Orchard Management.

Pruning demonstrations carried on by the Extension Horticulturist reached men who represented approximately 3,000 acres of orchards, consisting mostly of young trees not yet of bearing age. A special effort is being made to shape these trees in conformity with the modified leader type, which has proven to be the best for Kansas conditions.

Sixty cooperators were secured for spraying work during the season. They were located in 15 counties. The plan was to visit each of these men twice during the season, once for lime sulfur sprays and once for Bordeaux. Timely information was sent out to a mailing list of 3,500 prior to each spray date. Reports were received from approximately 100 home orchardists, who produced $35,000 worth of apples. Special assistance was rendered to commercial orchardists whose crop aggregated in excess of 200,000 bushels.

A special campaign was carried on in the Arkansas Valley to determine the emergence of the codling moth. Traps were located and visited in 12 orchards, two weeks were spent in the campaign.

A three day orchard tour was conducted in the Arkansas Valley with an average attendance of 65, the largest crowd was at Oxford where 350 people were brought together for a picnic supper.

A state fair exhibit was prepared which was visited by 259,000 people.

Most of the potato work in the state was conducted by the Extension Plant Pathologist, the Horticulturist assisting in cultural practices when possible. Assistance was given the Ford County potato growers in completing an organization which now numbers about 30 members and has successfully completed one year's business.

- - - - - - - - - - - - - -

NORTHEASTERN STATES CONFERENCE

New Haven, Connecticut, February 21 to 24, 1923.

On February 21st there assembled at New Haven the extension directors and the specialists' groups in club work, forestry and vegetable gardening of the northeastern section, including New York, Pennsylvania, New Jersey, Delaware, and the six New England States for a three day conference upon methods of conducting extension work. The vegetable men attending the conference were H. C. Thompson and F. O. Underwood of New York, W. B. Nissley of Pennsylvania, C. H. Nissley of New Jersey, A. E. Wilkinson of Connecticut, H.F. Tompson of Massachusetts and W. R. Beattie of the Department at Washington.

General sessions were held each morning following which the conference broke up into its respective groups for the consideration of problems connected with the work of each group. The vegetable specialists devoted the major portion of their time to the consideration of the best methods of determining the program of work and of forming the necessary contacts for carrying the plan into effect. This was the first instance where a group of vegetable gardening specialists have been brought together for a joint conference and those present felt that they gained a great deal by the personal contact. It is the plan to have as many vegetable specialists as possible meet together at the time of the annual meeting of the Vegetable Growers of America at Buffalo the latter part of September.

At the close of the conference of vegetable specialists at New Haven the following report and recommendations to the directors were presented:

1. We recognize the lack of definite experimental results as the greatest handicap to the successful promotion of vegetable extension work. We believe that every effort should be made to secure greater financial support for the solution of the more important vegetable problems.

2. The vegetable specialists of this group believe that the program of work should be built around special crops or commodities and be adapted to the community and county, as a part of the state program. We also believe that in determining the program it is important for the specialist to work closely with the State Extension Director, the state leaders and the extension agents within the county and to encourage the formation of a county vegetable committee. After studying the situation from all standpoints, the specialist should then determine the program.

3. The vegetable specialists believe that they should devote the greater part of their time to a comparatively few main or type demonstrations, leaving minor projects to county agents and local leaders.

4. We believe that the extension specialist should personally secure accurate records on a few of the major or type demonstrations. Records of minor demonstrations may be taken by the county agent or local project leader and in the presence of the cooperator.

5. We believe that the most effective publicity in the community is a meeting held at the demonstration.

6. We believe that the vegetable specialists should furnish the subject matter for use in the conduct of vegetable club work with juniors. We also believe that there is an opportunity for a diversification of club work in vegetable growing.

7. We believe in a demonstration with the farm home garden and that it is of first importance to have the cooperation of the home demonstration agents and nutrition specialists. We further believe that greater emphasis should be given to the dietetic value of vegetables in the general publicity of the extension service.

8. We recommend that farm management specialists be interested in the matter of obtaining vegetable crop production costs and farm management studies with vegetables.

9. We believe that the problems of marketing are today greater than those of production. We recommend that vegetable specialists devote more attention to the working out of a definite marketing program.

- - - - - - - - - - - - - - - - - -

HOME GARDENS IN 1923.

According to the 1919 census figures there were 6,488,347 farms in the United States. Of these 5,090,293 or 78.9% reported home gardens. The average value of these gardens was $68.00 or a total of $344,665,728.00 including potatoes grown in gardens. This report does not include the thousands of small gardens grown in city and town backyards or those on vacant lots. Many of the vegetable specialists are convinced that there has been a decided falling off in the number and value of farm gardens since the 1919 census was taken. This has been due mainly to labor conditions on farms and as a result the farmers' table has not been so well supplied with vegetables as formerly.

We find that many of the state specialists in vegetable gardening are uniting with the home demonstration agents and nutrition specialists in a movement for more and better farm gardens in 1923. The plan of campaign is for the most part based on publicity, calling attention to the nutritive value of certain of the standard vegetables and emphasizing the importance of having at least two fresh vegetables in the daily diet. Nutrition specialists are engaged in working out the vegetable requirements of average families and are relying upon the vegetable specialists to furnish the data relative to varieties, feet of row required to produce the required amount of each vegetable and general cultural directions. This is a good piece of work and should have the hearty support of every vegetable specialist.

W. R. Beattie, Extension Horticulturist.
C. P. Close, Extension Pomologist.